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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,565	05/31/2006	Gianmarco Polotti	LSP-1012US	2000
87627	7590	04/13/2010		
Mossman, Kumar & Tyler PC P.O. Box 421239 Houston, TX 77242			EXAMINER GREENE, IVAN A	
			ART UNIT 1619	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/541,565

Applicant(s)

POLOTTI ET AL.

Examiner

IVAN GREENE

Art Unit

1619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 9-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Status of the Claims

Applicant is hereby notified that the Examiner assigned to your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Examiner IVAN A. GREENE (Art Unit 1619, (571)270-5868).

Claims 1-16 are pending in the instant application. Claims 9-16 have been withdrawn based on Applicant's response to the Requirement for Restriction dated 10/28/2008. Claims 1-8 are currently being examined on the merits.

Priority

The U.S. effective filing date has been determined to be 12/18/2003, the filing date of the document PCT/EP03/51056. The foreign priority date has been determined to be 01/09/2003, the filing date of document ITALY VA/2003/A/0002.

Claim Objections

In Applicant's response to the first action on the merits dated 05/29/2009, Applicant's remarks regarding claim 1 required the use of numbered clauses because the claim language without the clauses is confusing. Accordingly the examiner objects to instantly recited claim 1 as being confusing. In order to ally the confusion and better organize the claim, the clauses therein should be well delineated (e.g. letters and/or Roman numerals rather than numbers which designate the claims). Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. **Claims 1-8 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**
2. Claim 1 is rejected as being indefinite because the claim recites --strongly acidic functional group--. The instant specification does not define "strongly acidic functional group" or present clear guidance as to the metes and bounds of what exactly a "strongly acidic functional" group should be. Accordingly the claim is indefinite. Applicant's arguments regarding this limitation are addressed below.
3. Claims 2-8 are rejected as depending from and doing nothing to correct the shortcoming of the parent claim.

Response to Arguments:

Applicant's arguments filed 05/29/2009 have been fully considered and are convincing with regards to all the limitations except the limitation "strongly acidic."

Applicant's argument that "strongly acidic" and "strong acid" have well recognized meaning in chemistry, is acknowledged. In response the examiner argues that the terms "strongly acidic" and "strong acid" are not considered synonymous because "strongly acidic" is used as functional language to describe a synthetic organic polymer substituent. A "strong acid," as applicant has pointed out, is an acid for which essentially

all the acid molecules dissociate in solution. A person having ordinary skill in the basic chemical arts would consider the most common "strong acids" as inorganic acids such as sulfuric acid, hydrochloric acid, or nitric acid, inter alia. It is unclear whether applicant intends to include such acids in the scope of the claimed "strongly acidic" functional group. And while applicant has gone to great length to clarify in their arguments what exactly the term "strongly acidic" means, the metes and bounds of the claim remain indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over YEUNG (US 5,721,313) and NEFF (US 4,861,499) in view of CHAUDHRY (6,051,245).

Applicants Claims

Applicant claims an inverse emulsion comprising the product of mixing an aqueous phase and an oil phase, wherein the weight ratio of the aqueous phase to the oil phase is from 4:1 to 2:1, and the inverse emulsion contains from 20% to 70% by weight of an anionic polymer obtained by inverse emulsion polymerization of: (1) one or more anionic acrylic monomers dissolved in the aqueous phase, and (2) a least one hydrophobic acrylic monomer dissolved in the oil phase; wherein the at least one or more anionic acrylic monomers contain a strongly acidic functional group and the concentration of the at least one hydrophobic acrylic monomer is from 0.1 to 5 weight percent of the total weight of the one or more anionic acrylic monomers. Applicant further claims the inverse emulsion wherein the anionic acrylic monomer containing a strongly acidic functional group is 2-acrylamido-2-methylpropenesulfonic acid and/or its sodium salt. Applicant further claims the inverse emulsion wherein the hydrophobic acrylic monomer is an ester of acrylic or methacrylic acid with C₄-C₂₀ linear or branched monofunctional alcohols. Applicant further claims the inverse emulsion wherein the hydrophobic acrylic monomer is stearyl methacrylate or n-butyl methacrylate.

Determination of the scope and content of the prior art (MPEP 2141.01)

YEUNG teaches a composition comprising a water-in-oil polymer emulsion wherein the polymer comprises monomers (a) through (d) as follows: (a) is an ethylenically unsaturated carboxylate having between about 3 and 6 carbon atoms; (b) an ethylenically unsaturated monomer which is nonionic in nature; (c) an ethylenically unsaturated monomer containing one or more sulfonate or sulfoalkyl groups; (d) an ethylenically unsaturated monomer having surface active properties; and wherein the polymer is crosslinked (abstract, claim 1).

YEUNG teaches the polymer is useful for one or more of the following applications: ink, pigment or dye thickener, adhesive, detergent, paint, cosmetic, printing paste, cleaner, explosive chemical, carpet backing or oil field chemical (1:52-57). YEUNG further teaches the object of their invention is to provide a polymer with multiple uses which will be readily apparent to those skilled in the art (1:58-67).

Regarding the specific monomers useful for their invention YEUNG discloses (a) as being acrylic acid, inter alia; (b) as being acrylamide, inter alia; (c) as being 2-acrylamido-2-methylpropanesulfonic acid (AMPS), inter alia; and (d) as being stearyl methacrylate, inter alia (2:27-32, 42-45, 60-65; 3:10-36; claims 1-4). Regarding the crosslinking agent YEUNG discloses the crosslinking monomer N,N-methylenebisacrylamide (3:43-50, claim 6).

NEFF teaches a water-dispersible hydrophobic thickening agent which is a water-soluble terpolymer having pendant hydrophobic groups (abstract). NEFF further teaches their polymer thickeners are useful for thickening aqueous media, in applications which require viscous liquids to retain their viscosity under stress conditions

such as high heat, shear forces, or high electrolyte concentrations (abstract). NEFF further teaches their polymer thickeners are useful for various applications such as mobility control fluid useful in enhancing oil recovery operations (2:1-30). NEFF further teaches their terpolymer thickening agents comprise the following three monomers: (1) an ethylenically unsaturated amide; (2) an N-substituted derivative of an ethylenically unsaturated carboxylic acid, an ethylenically unsaturated quaternary salt, a sulfoalkyl ester of an unsaturated carboxylic acid, a diallylamine, a diallylammonium compound or a vinylaryl sulfonate; and (3) a higher alkyl ester of an α,β -ethylenically unsaturated carboxylic acid, an alkylaryl ester of an ethylenically unsaturated carboxylic acid, an N-alkyl ethylenically unsaturated amide, a vinyl alkyl ether or an alkyl styrene (2:35-61). NEFF further teaches the terpolymer preferably contains from about 9 to about 99.995 mole percent of the combined monomers (1) and (2) with from about 0.005 to 2 mole percent of one or more hydrophobic monomers (3) (3:60-65). NEFF further teaches the suitable hydrophobic monomers (3) include alkyl esters derived from the reactions of alkanols having from 8 to 20 carbon atoms with ethylenically unsaturated carboxylic acids such as acrylic acid or methacrylic acid, inter alia (4:44-56; 5:3-8).

NEFF discloses the terpolymer consisting essentially of the monomer species as follows (1) acrylamide; (2) 2-acrylamido-2-methylpropanesulfonic acid; and (3) a C_8 - C_{20} ester of acrylic acid (claims 1-4).

**Ascertainment of the difference between
the prior art and the claims (MPEP 2141.02)**

The difference between the rejected claims and the teachings of YEUNG/NEFF is that YEUNG/NEFF do not expressly teach an inverse emulsion comprising the polymer species. This deficiency in an inverse emulsion comprising the polymer species is cured by the teachings of CHAUDHRY.

CHAUDHRY teaches thickeners for products for topical application such as personal care products for application to the skin or hair (title, abstract). CHAUDHRY further teaches the polymeric material comprises monomer units derived from (i) acrylamide; (ii) 2-acrylamido-2-methylpropanesulfonic acid (AMPS); and (iii) a polyfunctional monomer (abstract). CHAUDHRY further teaches a significant advantage for the personal care products and pharmaceuticals industry would be to provide a polymer composition which would serve both as a thickener and as a stabilizer and be in liquid form to enable easy handling by automatic dispensers (1:45-50). CHAUDHRY teaches "Surprisingly, we have found that it is possible, by the present invention and using the well known inverse polymerization technique, to produce polymers that function as both thickeners and stabilizers" (1:54-57).

CHAUDHRY teaches the water in oil emulsion may be prepared by a method comprising forming a water in oil emulsion of the monomer composition in which the total monomer concentration by weight of the water in oil emulsion is at least 30 weight percent (3:23-38). CHAUDHRY further teaches the polymer solids content of the water-in-oil emulsion incorporated into the personal care product is preferably 35-60% by weight of the total weight of the emulsion (4:35-39). CHAUDHRY further teaches the compositions embodying the invention may be prepared by incorporating the water in oil

emulsion into the remaining components, whereupon the emulsion "inverts" to provide a continuous liquid phase comprising the aqueous medium of the emulsion and any liquid in the composition comprising water or miscible with water (4:40-45). CHAUDHRY further discloses the example of an oil in water cream comprising approximately 71 percent by weight water (Example 5; 8:1-18).

Regarding the process steps of claim 1, "Even though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See MPEP § 2113.

Finding of prima facie obviousness

Rationale and Motivation (MPEP 2142-2143)

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to combine YEUNG and NEFF because both YEUNG and NEFF teach similar polymer compositions. One skilled in the art would have been motivated to combine YEUNG and NEFF because it is generally considered to be prima facie obvious to combine compounds, each of which is taught by the prior art to be useful for the same purpose, in order to form a composition that is to be used for an identical purpose. The motivation for combining them flows from their having been used individually in the prior art, and from the being recognized in the prior art as

useful for the same purpose. As shown by the recited teachings, instant claims are no more than the combination of conventional components of polymer compositions. It therefore follows that the instant claims define *prima facie* obvious subject matter. Cf. In re Kerkhoven, 626 F.2d 848, 205 USPQ 1069 (CCPA 1980).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to combine CHAUDHRY with YEUNG/NEFF because both YEUNG and NEFF teach similar polymer compositions and YEUNG teaches cosmetic applications for their polymer species; and CHAUDHRY teaches a cosmetic composition comprising a polymer thickener substantially similar to those taught by YEUNG and NEFF. One skilled in the art would have been motivated to combine CHAUDHRY with YEUNG/NEFF because it is generally considered to be *prima facie* obvious to combine compounds, each of which is taught by the prior art to be useful for the same purpose, in order to form a composition that is to be used for an identical purpose. The motivation for combining them flows from their having been used individually in the prior art, and from the being recognized in the prior art as useful for the same purpose. As shown by the recited teachings, instant claims are no more than the combination of conventional components of cosmetic polymer thickener compositions. It therefore follows that the instant claims define *prima facie* obvious subject matter. Cf. In re Kerkhoven, 626 F.2d 848, 205 USPQ 1069 (CCPA 1980).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to

one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

Response to Arguments:

Applicant's arguments filed 05/29/2009 have been fully considered but they are largely moot in view of the new grounds of rejection. However, applicant's arguments directed to YEUNG are addressed below.

Applicant's argument that the anionic polymer recited in claim 1 lacks monomer (b) of YEUNG which nonionic in nature, is not convincing because the scope of the instantly recited polymer is not being read as limited to only the two recited polymer monomers. The claim includes comprising language which invites additional ingredients and the polymer is recited as "an anionic acrylic polymer," which is not being read as expressly excluding nonionic species so long as the polymer is an anionic polymer.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following U.S. Patent documents are cited for applicant's consideration: LIM (US 4,147,681); CHONG (US 4,380,590); EVANI (US 4,432,881); BENTON (US 7,056,868); KIMPTON (US 5,612,429); VILLARD (US 2007/0036741); ZENG (US 2007/0004851); LOFFLER (US 2001/0029287); LORANT (US

2003/0036490); MATZ (US 6,482,776); JENKINS (US 5,639,841); and MONDET (US 5,318,995); MORSCHHAUSER (US 6,891,001). The following non-patent literature documents are cited for applicant's consideration: IUPAC "Gold Book," a compendium of Chemical Terminology, definition of anionic polymer; Hawley's Condensed Chemical Dictionary, entry for "acid"; Pub Chem (chemical database) entries for acrylic acid, lauryl acrylate, methylene-bis-acrylamide; sodium-2-acrylamido-2-methylproanesulfonic acid; and stearyl methacrylate.

Claims 1-8 have been examined on the merits. Claim 1 is objected to; Claims 1-8 remain rejected under 35 U.S.C. 112, second paragraph; and Claims 1-8 remain rejected under 35 U.S.C. 103(a). No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IVAN GREENE whose telephone number is (571)270-5868. The examiner can normally be reached on Monday through Thursday 7AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bonnie Eyler can be reached on (571) 272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/YVONNE L. EYLER/
Supervisory Patent Examiner, Art Unit 1619

IVAN GREENE
Examiner, Art Unit 1619